ENSIGN BICKFORD DAM
CT 00567

FARMINGTON RIVER BASIN
SIMSBURY, CONNECTICUT

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

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Cover program reads: Phase I Inspection Report, National Dam Inspection Program; however, the official title of the program is: National Program for Inspection of Non-Federal Dams; use cover date for date of report.

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

DAMS, INSPECTION, DAM SAFETY,
Farmington River Basin
Simsbury, Connecticut

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Field observations indicated that the dam should be classified as "Low" potential hazard. The dam is too small to qualify under the Federal Dam Inspection Program.

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ROALD HAESTAD, INC.
CONSULTING ENGINEERS

37 Brookside Road • Waterbury, Conn. 06708 • Tel. 203 753-9800

January 2, 1981

The Department of the Army
Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Massachusetts 02154

Attention: E.P. Gould
Project Management Division

Re: Ensign Bickford Dam
Simsbury, Connecticut

Gentlemen:

Following field surveys of Ensign Bickford Dam, we conclude that the dam is too small to qualify under the Federal Dam Inspection Program. Field observations also indicate that the dam should be classified as "Low" potential hazard.

We are enclosing a brief letter report substantiating our findings.

Very truly yours,

ROALD HAESTAD, INC.

By Roald Haestad
Roald Haestad

RH:DLS:cft

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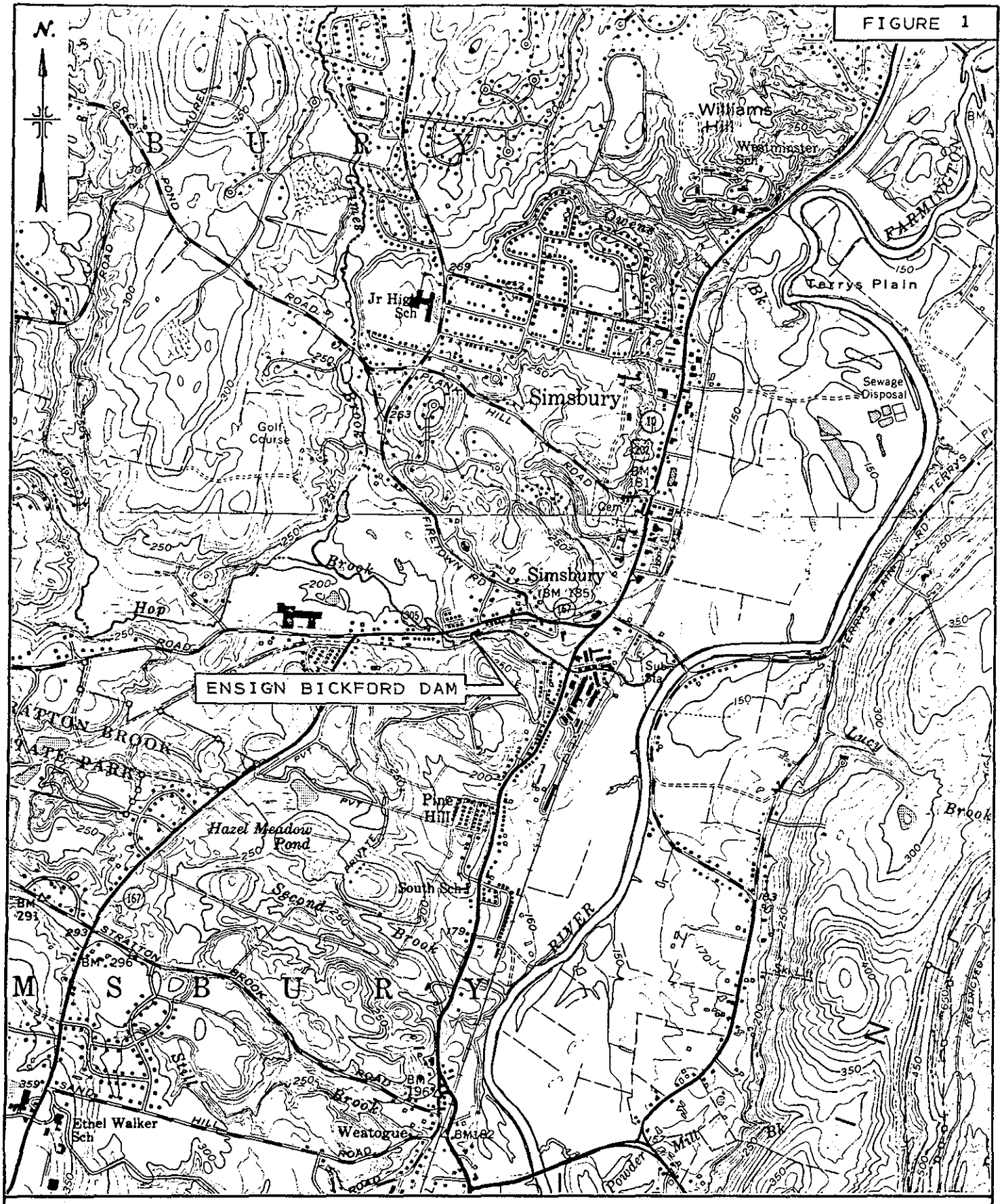
FIGURE 1



LOCATION PLAN

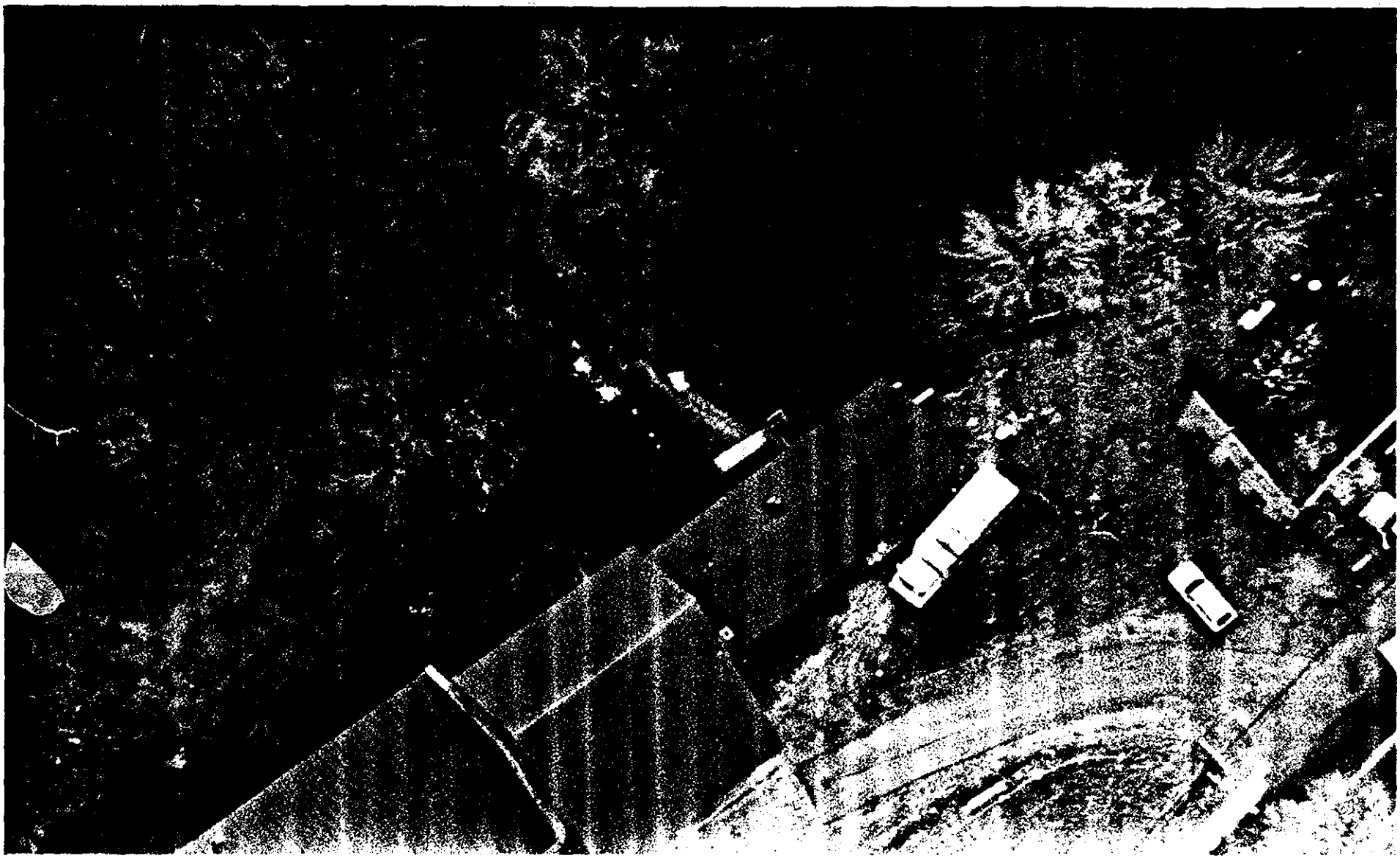
ENSIGN BICKFORD DAM

SIMSBURY, CONNECTICUT

SCALE; 1" = 2000'

ROALD HAESTAD, INC.

AVON QUADRANGLE 1968



OVERVIEW PHOTO

U.S.ARMY ENGINEER DIV NEW ENGLAND
CORPS OF ENGINEERS
WALTHAM, MASSACHUSETTS

ROALD HAESTAD, INC.
CONSULTING ENGINEERS
WATERBURY, CONNECTICUT

NATIONAL PROGRAM OF
INSPECTION OF
NON-FED. DAMS

ENSIGN BICKFORD DAM - CT 00567

HOP BROOK

SIMSBURY, CONNECTICUT 13 NOVEMBER 1980

DESCRIPTION

Ensign Bickford Dam
CT 00567
Town of Simsbury, Hartford County, Connecticut
On the Hop Brook
Owned and Operated by The Ensign Bickford Company

The Ensign Bickford Dam consists of a dry stone masonry wall with a maximum height of about 21 feet and an upstream earth embankment. The dam is about 60 feet long, including a 35 foot overflow spillway section in the center of the dam, Photo 1. The spillway has a concrete cap extending back about 10 feet from the crest. The right abutment is a ledge outcrop, Photo 3. An old mill building is located at the left abutment, Photo 5.

Outlets consist of a stone conduit discharging through the dam at the right abutment approximately 2' x 2' in size, Photo 2, a pipe estimated to be 36-inches in diameter discharging to a concrete flume at the left end of the spillway, Photo 8, and a 4 foot wide sluiceway under the old mill building controlled by a new 4' x 4' sluice gate, Photo 10. All outlets are controlled by upstream gates. The sluiceway also has a 19 foot long concrete weir about 2 feet above spillway level located downstream of the sluice gate, Photo 5, which would act as an auxiliary spillway discharging through the old conduit at the toe of the dam, Photos 5 and 6. The new sluice gate and concrete sluiceway were installed as part of a hydroelectric project in 1978 by GSA International. The project was never completed.

The impoundment has a water surface area of less than 2 acres and an average depth of about 10 to 12 feet with the water level at the top of the dam. Thus maximum storage capacity is about 24 Acre-Feet.

The dam height of 21 feet and storage capacity of 24 Acre-Feet are both below the requirements for a small dam. The dam, therefore, does not qualify for the Corps inspection program.

Without performing a flood routing, the hazard potential appears to be low. A dam breach with water at spillway level would produce a peak discharge of about 1900 cfs, which would not flood any homes. The uninhabited downstream reach is long enough to dissipate the flood wave because of the low storage capacity of the impoundment.

The dam was overtopped in the August 1955 flood without failure. Flooding at the downstream Engsign Bickford industrial complex was severe at that time because of inundation from the Farmington River. Failure of the dam during such a flood would not have added substantially to the inundation.

APPENDIX A

Photographs

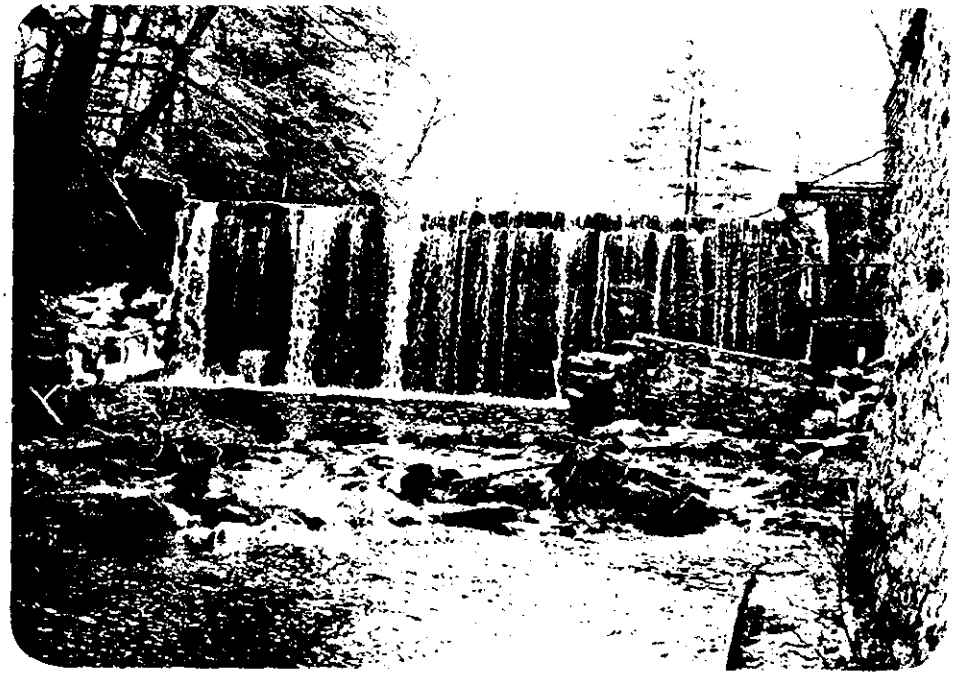


PHOTO NO. 1

SPILLWAY

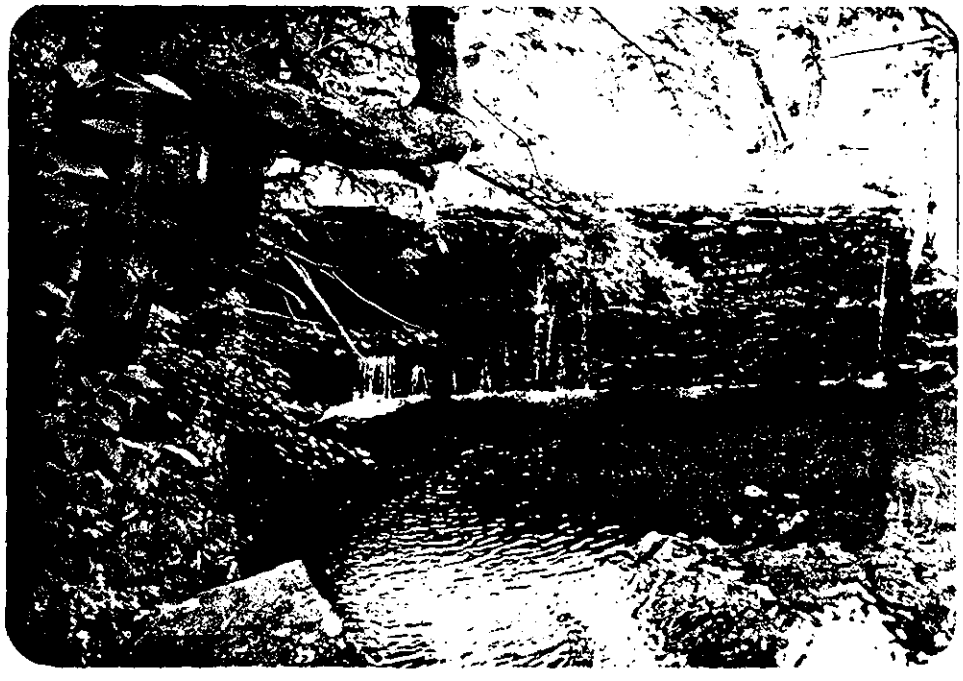


PHOTO NO. 2*

SPILLWAY. NOTE LEAKAGE THROUGH DAM AND DISCHARGE FROM CONDUIT AT RIGHT SIDE OF DAM

*7 SEPT '80

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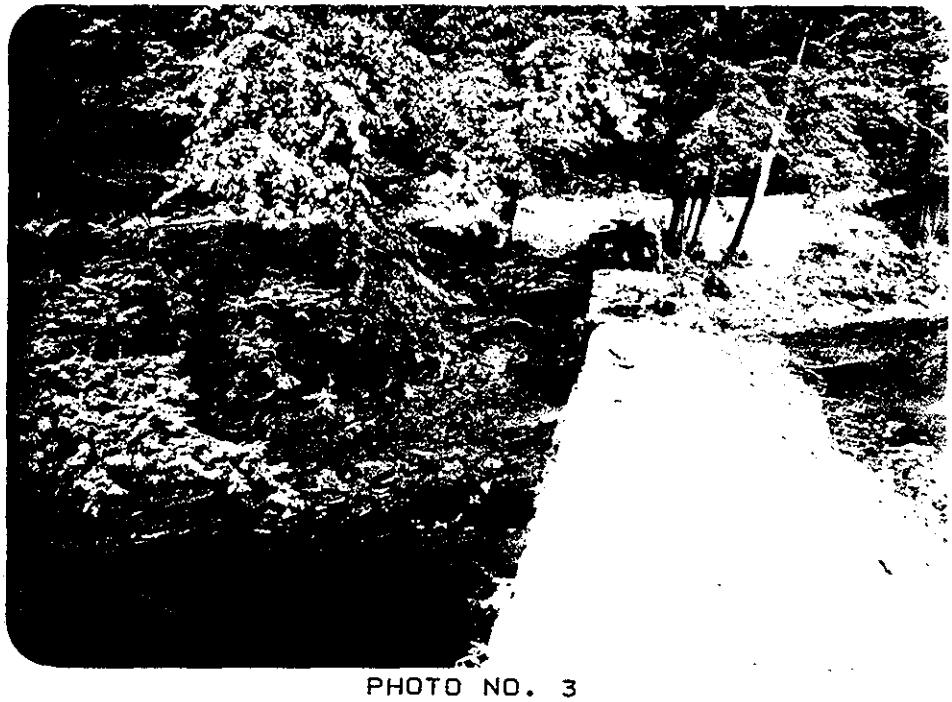

PHOTO NO. 3

SPILLWAY AND RIGHT ABUTMENT

PHOTO NO. 4

RIGHT ABUTMENT SHOWING DETERIORATION
AND UNDERMINING OF STONE MASONRY

U.S.ARMY ENGINEER DIV. NEW ENGLAND CORPS OF ENGINEERS WALTHAM, MASSACHUSETTS	NATIONAL PROGRAM OF INSPECTION OF NON-FED. DAMS	ENSIGN BICKFORD DAM HOP BROOK SIMSBURY, CONNECTICUT CT 00567 7 SEP '80
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PHOTO NO, 5*

MILL BUILDING AT LEFT ABUTMENT. NOTE AUXILIARY SPILLWAY UPSTREAM OF DAM AND DETERIORATED CONCRETE CAP ON MAIN SPILLWAY

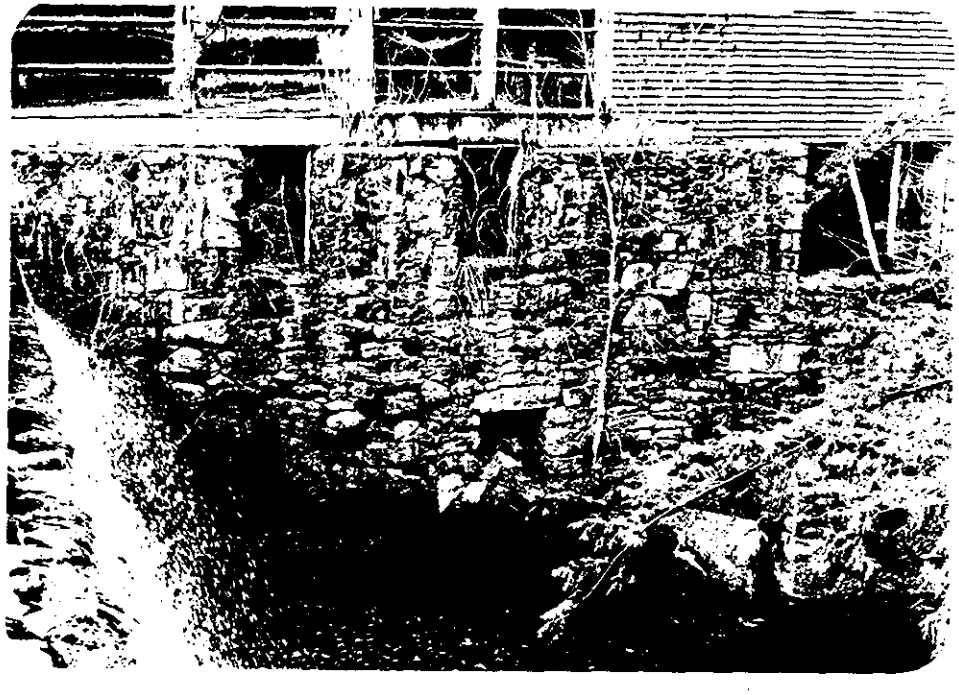

PHOTO NO. 6

FOUNDATION OF OLD MILL DOWNSTREAM OF DAM. ARCHED CONDUIT DISCHARGES FLOW FROM NEW SLUICE GATE AND AUXILIARY SPILLWAY

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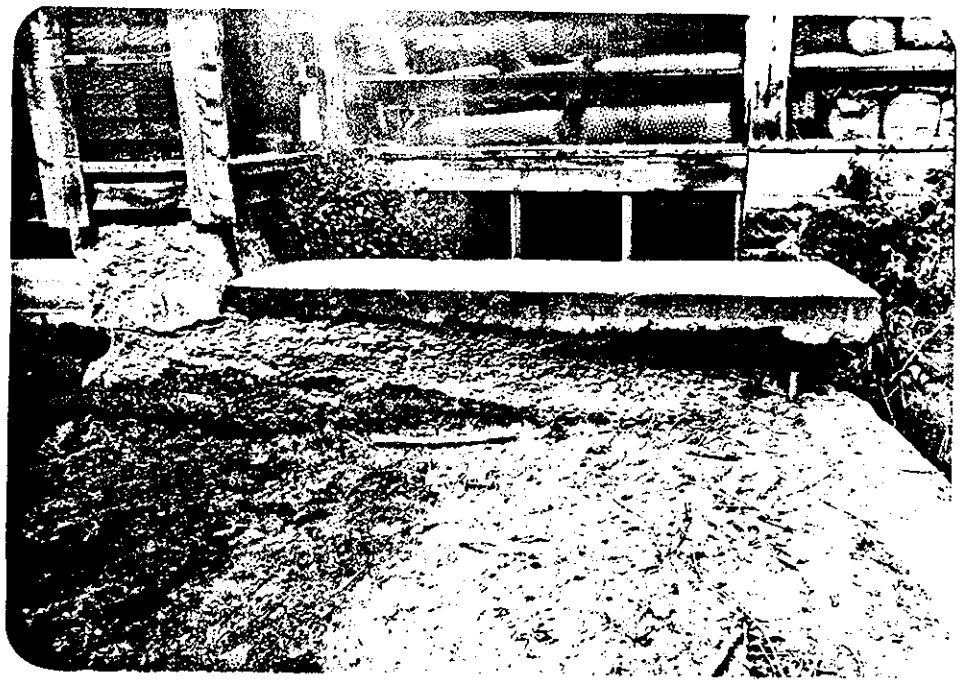

PHOTO NO. 7*

DETERIORATION OF CONCRETE AT LEFT SPILLWAY TRAINING WALL

PHOTO NO. 8

DETERIORATED TRAINING WALL AND 30-INCH OUTLET AT LEFT END OF SPILLWAY

*7 SEP '80

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PHOTO NO. 9

OPERATOR FOR 36-INCH OUTLET AT LEFT SPILLWAY TRAINING WALL

PHOTO NO. 10

NEW 4'X4' SLUICE GATE AND CONCRETE SLUICEWAY AT LEFT END OF DAM

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PHOTO NO. 11

RIGHT ABUTMENT. NOTE OPERATOR
IN POND FOR STONE MASONRY SLUICEWAY

PHOTO NO. 12*

RIVER CHANNEL DOWNSTREAM OF DAM. NOTE OLD
RAILROAD RETAINING WALL AT RIGHT AND TRESTLE
PIER AT CENTER REAR

*7 SEP '80

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